

PATENT

REMARKS

In the Office Action, claims 2-10, 12-16, 18-22, 24-27, 29-31, 34, 37, 40, and 43 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Number 4,830,006 to Haluska et al.

In response thereto, claims 24-27, 29, 30, and 40-45 have been cancelled and claims 4, 7, 13, 19, 25, 30, 32, 33, 35, 36, 38, 39, 42, 44, and 45 have been amended. Accordingly, claims 2-10, 12-16, 18-22, and 31-39 are now pending. Following is a discussion of the patentability of each of the pending claims.

Independent Claim 7

Claim 7 recites a method for determining an improved defibrillation shock energy (DFSE) for a patient. The method comprises automatically adjusting the DFSE to a level based on cardiac data so that an implantable cardiac therapy device may deliver a therapeutic shock at an energy level approximating an improved DFSE for the patient. The cardiac data comprises data selected from a group consisting of cardiac rate, cardiac fibrillation rate, and duration since last therapeutic shock.

The Haluska et al. reference discloses an implantable cardiac stimulator for detecting and treating ventricular arrhythmias. The stimulator permits selective partitioning of the heart rate continuum into a plurality of contiguous tachycardia classes of progressively higher rate ranges, the lowest and highest of these classes being bounded respectively by regions of the continuum denoting sinus rate and fibrillation. In response to detection of an arrhythmia within or outside of the designated tachycardia classes, the stimulator delivers one or more therapies. With an ascending order of aggressiveness of therapy according to the degree of hemodynamic intolerance of the arrhythmia, available therapies include bradycardia pacing, anti-tachycardia pacing, cardioverting shocks, and defibrillation shocks. In one embodiment, tachycardia-1 is treated with non-aggressive pacing bursts, tachycardia-2 is treated with aggressive pacing bursts, tachycardia-3 is treated with cardioverting shocks, and fibrillation is treated with defibrillating shocks.

PATENT

The Haluska et al. reference does not disclose or suggest automatically adjusting the defibrillation shock energy to a level based on cardiac data comprising data selected from a group consisting of cardiac rate, cardiac fibrillation rate, and duration since last therapeutic shock. As stated previously, the Haluska et al. reference provides an increasing aggressiveness of therapy with increasing heart rate such that tachycardia-1 is treated with non-aggressiveness pacing bursts, tachycardia-2 is treated with aggressive pacing bursts, and tachycardia-3 is treated with cardioverting shocks. It is noted that these three forms of therapy are not defibrillation shocks. In order to treat fibrillation, the disclosed therapy comprises defibrillation shocks. In column 21, lines 59-64, the Haluska et al. reference states a low level defibrillation shock is provided and subsequent higher level defibrillation shocks are provided if the previous shocks do not terminate the fibrillation. However, nowhere does the Haluska et al. reference disclose or suggest automatically adjusting defibrillation shock energy to a level based on duration since last therapeutic shock. According to the specification of the present application (see page 27, lines 8-13), a higher defibrillation shock energy is required for fibrillation immediately returning after a recent shock and for fibrillation returning after a long absence, and a lower defibrillation shock energy is required for fibrillation returning between the two extremes.

Accordingly, it is respectfully submitted that claim 7 is in condition for allowance.

Dependent Claims 2-6, 8-10, and 31-33

Claims 2-6, 8-10, and 31-33 depend from claim 7 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Independent Claim 13

For at least the same reasons discussed above with regards to claim 7, it is respectfully submitted that claim 13 is in condition for allowance.

PATENT

Dependent Claims 12, 14-16, and 34-36

Claims 12, 14-16, and 34-36 depend from claim 13 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Independent Claim 19

For at least the same reasons discussed above with regards to claim 7, it is respectfully submitted that claim 19 is in condition for allowance.

Dependent Claims 18, 20-22, and 37-39

Claims 18, 20-22, and 37-39 depend from claim 19 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

CONCLUSION

In light of the above claim amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

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Date

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